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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/754,683	01/03/2001	Hyun Mun Kim	42390P10265	2893

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EXAMINER	
PHILIPPE, GIMS S	

ART UNIT	PAPER NUMBER
2613	17

DATE MAILED: 02/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/754,683	KIM ET AL	
	Examiner	Art Unit	
	Gims S Philippe	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-51* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-51* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5-6*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This is first action in response to application no. 09/754,683 filed on January 3rd 2001 in which claims 1-51 are presented for examination.

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claim 49 is rejected under 35 U.S.C. 101 because it contains non-functional descriptive material. While the storage medium contains a look up table, which calls for a specific relationship, there is no specific function between the storage medium and the look up table.

Claims 50-51 are rejected by dependency to claim 49.

Claims 15-17 are rejected under 35 U.S.C. 101 because the phrase "capable of" in claim 15 does not mean that the processor will perform the execution. The claim calls for a probability of executing. In addition, the software per se is not tangibly embodied on the computer readable medium.

Claims 44-48 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 44-48 are not tied to technological arts and the method could be performed by hand. In fact, the method can be performed with equation 1 of page 7.

The claimed invention as seen in claims 49-51, 15-17, and claims 44-48 must accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." State Street,149 F.3d at 1373, 47 USPQ2d at 1601-02. The purpose of this requirement is to limit patent protection to inventions that possess a certain level of "real world" value, as opposed to subject matter that represents nothing more than an idea or concept, or is simply a starting point for future investigation or research (Brenner v. Manson, 383 U.S. 519, 528-36, 148 USPQ 689, 693-96); In re Ziegler, 992, F.2d 1197, 1200-03, 26 USPQ2d 1600,1603-06 (Fed. Cir. 1993)). Accordingly, a complete disclosure should contain some indication of the practical application for the claimed invention, i.e., why the applicant believes the claimed invention is useful. Apart from the utility requirement of 35 U.S.C. 101, usefulness under the patent eligibility standard requires significant functionality to be present to satisfy the useful result aspect of the practical application requirement. See Arrhythmia, 958 F.2d at 1057, 22 USPQ2d at 1036. Merely claiming nonfunctional descriptive material stored in a computer-readable medium does not make the invention eligible for patenting. For example, a claim directed to a word processing file stored on a disk may satisfy the utility requirement of 35U.S.C. 101 since the information stored may have some "real world" value. However,

the mere fact that the claim may satisfy the utility requirement of 35 U.S.C. 101 does not mean that a useful result is achieved under the practical application requirement. The claimed invention as a whole must produce a "useful, concrete and tangible" result to have a practical application. Although the courts have yet to define the terms useful, concrete, and tangible in the context of the practical application requirement for purposes of these guidelines, the following examples illustrate claimed inventions that have a practical application because they produce useful, concrete, and tangible result:
- Claims drawn to a long-distance telephone billing process containing mathematical algorithms were held to be directed to patentable subject matter because "the claimed process applies the Boolean principle to produce a useful, concrete, tangible result without pre-empting other uses of the mathematical principle." AT &T Corp. v. Excel Communications, Inc., 172 F.3d 1352, 1358, 50 USPQ2d 1447, 1452 (Fed. Cir.1999);

- "Transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces a useful, concrete and tangible result' -- a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades." State Street, 149 F.3d at 1373, 47 USPQ2d at 1601; and - Claims drawn to a rasterizer for converting discrete waveform data samples into anti-aliased pixel illumination intensity data to be displayed on a display means were held to be directed to patentable subject matter since the claims defined "a

specific machine to produce a useful, concrete, and tangible result." In re Alappat, 33 F.3d 1526, 1544,31 USPQ2d 1545, 1557 (Fed. Cir. 1994).

A process that consists solely of the manipulation of an abstract idea is not concrete or tangible. See In re Warmerdam, 33 F.3d 1354, 1360, 31 USPQ2d 1754, 1759 (Fed. Cir. 1994). See also Schrader, 22 F.3d at 295, 30 USPQ2d at 1459.

3. Claims 15-17, 44-48, and 49-51 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a computer or an asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

Note: The applicant should note that while many of the claims are rejected under 35 U.S.C., the claims will be rejected as best understood by the examiner.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 5-6, 9-14, 18, 21-23, 26-28, 31, 34-35, and 38-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Feder et al. (US Patent no. 6,300,973).

Regarding claims 1, 11, 18, 23, 28, 35, and 40 Feder discloses a device, apparatus and method of performing video encoding video encoding comprising adjusting a video encoding rate employed during video encoding based at least in part on an estimation of motion for a selected portion of a video image being encoded (See Feder col. 7, lines 7-21, and lines 60-65). Also see fig. 1, for additional features such as a frame memory 165 coupled to encoder 170.

As per claims 5-6, 22, 26, 31, and 38, most of the limitations of this claim have been note in the above rejection of claim 1. In addition, Feder further adjusts the encoding rate by adjusting the quantization step size (See Feder col. 8, lines 38-57).

As per claim 9, most of the limitations of this claim have been note in the above rejection of claim 1. In addition, Feder further discloses performing the video encoding performed in MPEG or H.26x compliant (See Feder col. 1, lines 45-54).

As per claims 10 and 21, 27, 34, and 39, most of the limitations of this claim have been note in the above rejection of claim 1. In addition, Feder further discloses that the estimate of the motion comprises the sum of absolute differences or its substitute (See Feder col. 7, lines 65-67 and col. 8, lines 1-4).

As per claims 12-14, most of the limitations of these claims have been noted in the above rejection of claim 11. In addition, Feder proposes an integrated circuit for implementing the encoding process in a microprocessor (See feder col. 10, lines 50-58).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 2-4, 7-8, 19-20, 24-25, 29-30, 32-33, 36-37, and 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feder in view of Uz et al. (US Patent no. 5847761).

As per claims 2-4, 7-8, 19-20, 24-25, 29-30, 32-33, 36-37, and 41-43, most of the limitations of these claims have been noted in the above rejection of claim 1.

It is noted that Feder is silent about adjusting the encoding rate based at least in part on the type of macroblock.

Uz discloses performing encoding including the step of adjusting the encoding rate based at least in part on the type of macroblock (See Uz col. 12, lines 30-44).

Therefore, it is considered obvious that one skilled in the art at the time of the invention would recognize the advantage of modifying Feder rate controller by

incorporating Uz' step of adjusting the encoding rate based at least in part on the type of macroblock. The motivation for performing such modification in Feder is to determine the initial occupancies of the buffer of each macroblock type as taught by Uz (See Uz col. 6, lines 5-17).

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Legall (US Patent no. 5929916) teaches variable bit rate encoding.
Hui (US Patent no. 6654417) teaches one-pass variable bit rate moving picture encoding.
Huang et al. (US Patent no. 5617145) teaches adaptive bit rate allocation for video and audio coding.
Legall et al. (US Patent no. 5872598) teaches scene change detection using quantization scale factor rate control.
Uz et al. (US Patent no. 5686963) teaches method for performing rate control in a video encoder which provides a bit budget for each frame while employing virtual buffer verifiers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gims S Philippe whose telephone number is (703) 305-1107. The examiner can normally be reached on M-F (9:30-7:00) Second Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris S Kelley can be reached on (703) 305-4780. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gims S Philippe
Primary Examiner
Art Unit 2613

GSP

February 11, 2004